

SUPPLEMENT.

The Mining Journal, RAILWAY AND COMMERCIAL GAZETTE;

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

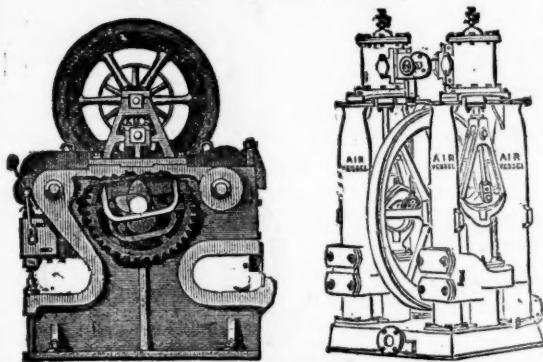
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No. 2276.—Vol. XLIX.

LONDON, SATURDAY, APRIL 5 1879.

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A DIPLOMA—HIGHEST OF ALL AWARDS—given by the
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exhibited the McKeane Drill alone as the MODEL BORING MACHINE
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tive weeks, ending February 7, was 24'90, 27'60, 24'80, 26'10,
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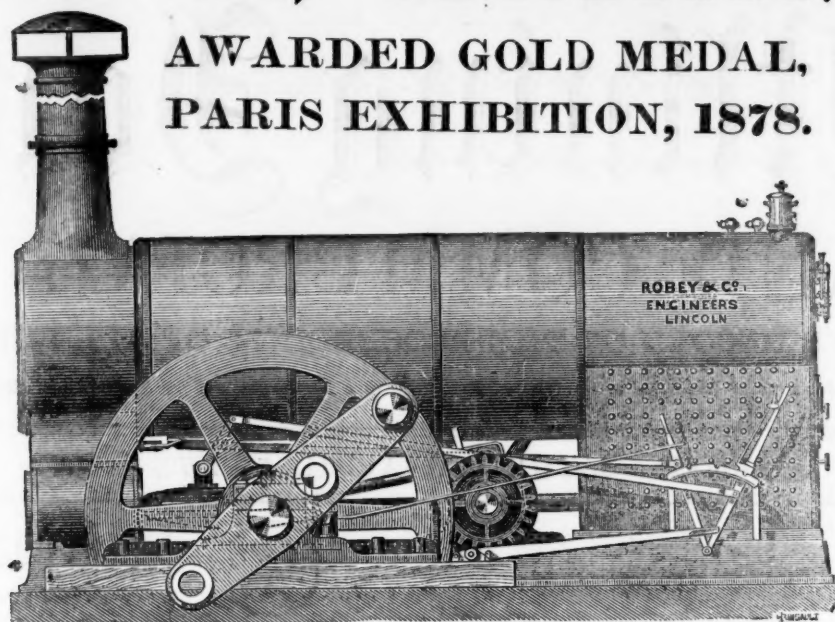
"2. Its simple
construction ensures
durability, &c.
"4.—The steam or
air cushions at each end of cylinder effectually protect from injury
"5. Its having an automatic feed, giving it a steady motion, &c.
"6. Its greater steadiness and absence of jar and vibration ex-
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parts, &c.
"7. Its greater power is some FORTY PER CENT. in favour of the
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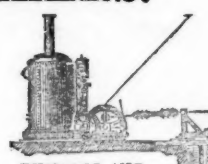
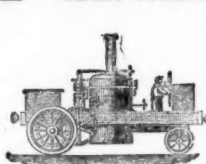
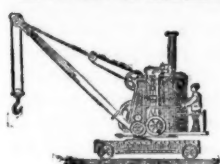
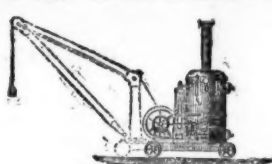
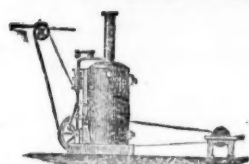
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BELTING versus GEARING.

Of late years a great change has been gradually taking place in the Mills and Manufactories of Lancashire and Yorkshire by the substitution, betwixt the Engines and Shafting, of Belting for Gearing, thus doing away with all noise and vibration, as well as wonderfully reducing the cost of repairs; and so manifest are its advantages, that driving by Gearing will soon be the exception.

As a still greater improvement, we beg to submit our Wrought-iron Drums (Rodgers's Patent), of which we are the Sole Makers. Their special merits may be briefly stated as follows:—

- 1.—These drums absorb less of the power of the engine in friction than any other mode of driving.
- 2.—Leather belts on these drums will drive considerably more than cast-iron ones, and the belts last much longer.
- 3.—These drums are not only considerably lighter in the larger sizes, but also infinitely stronger than cast-iron ones.
- 4.—In case of fire they suffer little damage. We have repaired many hundreds that have been in very serious fires, generally at about 25 per cent. on first cost.
- 5.—For MAIN DRIVING purposes they are invaluable, especially in case of a new mill, as they do not require such substantial and heavy building construction as is necessary in ordinary cases to withstand the constant vibration of gearing.



- 6.—The wrought-iron drums and belts are more easily and quickly fixed than gearing.
- 7.—Greater economy in steam power, as it requires less power to transmit the same effective force with belts than it does with gearing.
- 8.—Very much greater economy in subsequent repairs, as compared with gearing.
- 9.—The power is transmitted evenly, faithfully, and noiselessly, and without the vibration arising from defective or worn gearing.
- 10.—They require no cases for transport or shipment.

In support of the foregoing statements, we may say we have already supplied upwards of 20,000 of these Drums for use in Great Britain and Ireland, and have also exported them largely throughout the Continent of Europe, India, and the British Colonies.

These Drums being made by special machinery, can be made any diameter up to 24 feet, and also any width up to 4 feet, and to fit any size of shaft.

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Original Correspondence.

THE ELECTRIC LIGHT.

SIR,—Once more I have to report about some progress. Mr. W. B. Brain, a proprietor of coal mines, invented a new electric regulator, purposely arranged to light the coal pits, and last Thursday and Friday evenings this lamp and several others were shown at the Bristol Docks, and these experiments were of great interest. Four powerful Gramme's machines, worked by Simon and Sons Eclipse gas motor, to generate the electric light. Everything went off wonderfully well, if even there had been only a short time left for making the necessary arrangements. The electric lamp in coal mines may turn out a great boon. It is worth while to continue these experiments, and Mr. Brain's lamp may soon become in regular use when once its advantages get well known. A new company, called the Pyramid Electric Light, will supply these lamps. I will also mention, as it may interest many of your readers, that on May 7 a great exhibition of electro machines, and lamps and gas engines to drive them, will take place at the Royal Albert Hall, South Kensington, under the presidency of H. R. H. the Prince of Wales, who has promised to be present. All the electricians in Great Britain will be there, and there will be the greatest variety of electric machinery which ever has been brought together. CHARLES STEENE, C.E.

VALUATION BILL AND WEIGHTS.

SIR,—I see by the Journal of March 29 that the Executive Council of the British Iron Trade Association have, after consideration, decided to support a clause as to the valuation of coal and other mines, providing that "the annual value of coal and other mines shall be assessed yearly according to the quantity of mineral gotten," &c. Two points seem to arise on this information which call for the careful attention of all coal miners—as to the assessment, and as to a uniform measure of weight throughout the kingdom. On the first I would venture to suggest that the most equitable way of assessing a colliery would be by royalty on the ton or other weight universally adopted, whereby colliery companies starting for coal would not be weighed down by outstanding charges so much before gaining the coal. On the second, I cannot help feeling that the opportunity is being allowed to slip by of utilising a fair and equitable Act (the Weights and Measures) for removing abuses which are, and always have been, at the root of colliery ruin. Let there be universal weights and no gauges or measures in coal, let the same weights be for coal producers as for coal salesmen, and let us have no more unjust preferences such as granting tons of 26 cwt. Uniformity is the enemy of imposition, which producers and consumers alike have interested reasons for putting down.

COLLIERY DIRECTOR.

WINDING ENGINES FOR COLLIERIES.

SIR,—The efficiency of winding engines is of importance not only in the power requisite for raising coal in sufficient quantity, but also in the degree of safety afforded in the operations of lowering and raising persons in the pits. Most of the winding engines erected at collieries are non-condensing, but where it is desirable to economise fuel and increase the power of an engine condensing apparatus should be applied where a sufficient quantity of water is obtainable. A separate engine and condenser is now in some cases applied to existing non-condensing engines. It must be admitted these cases are not very numerous, for the large consumption of fuel at collieries seems not to be much regarded, on the ground that the small coal used is frequently unsaleable.

Modern winding engines are usually made large in proportion to the work they have to perform, in order to make them start quickly, and so expedite the amount of work raised; this causes a great strain on the ropes, and lessens their duration. The horizontal double-cylindrical engine is the modern type of winding engine. When first introduced, about the year 1851, it was considered that the cylinders would wear at the bottom and become of an oval form, for this reason the piston rods were taken through the back end of the cylinders, and a slide was added at the end to take the weight off the cylinders. Practically this has not been found to be of any use in this respect; the cylinders are not found to be worn at the bottom, provided the pistons are made as light as possible and with sufficient bearing surface, and the cylinders of good hard metal. The old type of winding engines in the Durham, Northumberland, and Lancashire coal fields was the single vertical cylinder with plain overhead drum; in most modern erections the single or double horizontal cylinders have been adopted, and in many cases with the conical drum.

We are indebted to Mr. G. H. Daglish, of St. Helen's, for the following particulars of the winding engines at Rose Bridge Colliery, near Wigan. The first engine, erected in 1853, has one 36 in. cylinder, 5 ft. stroke, with double-beat gun-metal valves; the drum is 10 ft. in diameter, and flat. On the same shaft is a fly-wheel, 20 ft. in diameter, used for the brake. The back piston rod was used originally for a feed pump; this was removed some years ago, and a considerable saving of power and of packing was made. The pit is 290 yards in depth; the ropes are flat, of iron-wire, each weighs 35 cwt., and wears about two years; each cage is made of steel, and weighs 28 cwt., including the chains. Four tubs are raised each winding, weight of one tub 3 cwt., holding 8 cwt. of coal; weight of coal raised per hour is 80 tons. The winding takes about 35 to 40 seconds, giving an average speed of about 1491 ft., or 28 mile per minute. The engine has been at work day and night upwards of 22 years, and there is no appreciable wear of the interior of the cylinder, being as correct in form as at first. The pressure in the boilers is 40 lbs. per square inch.

The winding engine, erected in 1860 at the deep pit of Rose-bridge Colliery, consists of two horizontal 36 in. cylinders, 6 ft. stroke, with double-beat gun-metal valves. For ten years—up to 1870—this engine raised coal from a depth of 605 yards. The drum was flat, 20 ft. diameter at first lift, and 23½ ft. with the rope all wound. The ropes were of steel-wire, flat and taper, each rope weighed 57 cwt., or 48 cwt. in the pit; their duration was about 18 months. Four tubs were raised each winding, carrying 8½ cwt. of coal each. One cage, with chains, weighed 30 cwt. The windings in 10 hours were 500, equal to 85 tons raised per hour. Each winding was made in 48 seconds, giving an average speed of 2268 ft., or 43 mile per minute. The cage guides were of iron-wire. The steam was generated by eight cylindrical boilers, 36 by 5½ ft., to a pressure of 45 to 50 lbs. per square inch.

In 1870 this pit having been sunk lower, to the Arley Mine, coal was then raised from a depth of 806 yards. The drum of the engine was increased to 24½ ft. diameter, its diameter being 23 ft. with all the rope on. The ropes now used are of steel, flat and taper, each rope weighs 65 cwt., or 57 cwt. in the pit; their duration is 18 months. At each winding four tubs are raised, each tub weighs 3½ cwt., and carries 7½ cwt. of coal. The windings in 10 hours are 450, or 45 per hour, equal to 67 tons raised per hour. Each winding is made in 55 seconds, equal to an average speed of 2637 ft., or 499 mile per minute; 27 seconds is the time taken to change the tubs. The cage guides are iron-wire rope, 1 7-16 in. in diameter. The average piston speed of this engine is 376 ft. per minute, the maximum 720 ft. The average speed of the cage in the pit is 2590 ft. per minute, the maximum speed 5100 ft. per minute, or 57 miles per hour. The boiler pressure is from 60 to 65 lbs. per square inch; the back piston rods were taken away, and 4 to 5 lbs. of steam pressure was thus saved. The cylinders have never been bored or repaired since they were erected, and the piston rings have been found to last 18 months. From these facts it is considered the doing away with the back piston rods and guides is an advantage, and no benefit was got from them when in use. The power exerted by the engine in each winding is 19,193,400 foot-lbs., the duty or weight of coal raised by each winding is 8,114,400 foot-lbs., or 42 per cent. of the gross power. This engine is not counterbalanced further than what is afforded by the winding with flat ropes.

The most modern type of winding engine fitted with conical drum is exemplified by the engine erected at Pemberton Colliery, near Wigan. It has two horizontal 36-in. cylinders, 6 ft. stroke, and

conical drum, sloping outwards, increasing from 19 ft. to 30½ ft. in diameter. Its weight is about 40 tons, and it is composed entirely of wrought and cast iron, the groove iron is so shaped that it is impossible for the rope to run out of the groove. This engine winds from a depth of 638 yards in 55 seconds, giving an average speed of 2087 ft., or 39 mile per minute. The changing of the tubs requires 35 seconds. The cage is of steel, and weighs with the chains 29 cwt. Each cage carries six tubs of steel, weight of the six 18½ cwt.; weight of coal, 46 cwt. in each winding; 92 tons of coal is raised per hour. The ropes are of steel, tapering from 1½ to 1¼ in. in diameter, each weighs 59 cwt.; they are expected to have four years average duration, one has been used 47 months. The under rope will have about three months shorter duration than the upper one. The long duration of these ropes is attributed to the absence of the wearing action of the coils against each other which takes place on flat drums, and to the careful manner with which the grooves have been made; the large diameter of the pit pulleys (18 ft.) and of the drum itself will also conduce to the duration. The drum makes 22 revolutions in each winding. The cage guides are formed of iron T-rails, weight 42 lbs. per yard. The steam pressure at the engine is 53 lbs. per square inch. The object of adopting the conical drum and other modes of counterbalancing being to have a uniform load on the engine in every part of the winding; this conical drum is made to perform almost perfectly in its varying diameters; the great weight of the drum to be moved at the start prevents the severe strains on the ropes which a strong engine with flat drums occasion if not counterbalanced. The principal objection to the conical drum in working is the stoppage occasioned in changing the tubs at the top and bottom of the pit on account of the unequal diameters of the drum.

There are other modes of counterbalancing engines of long usage in the Northern coal field. The chain counterbalance is that principally used; it consists in the upper portion of a heavy suspending chain, in the lower of a bunch of chain, which is raised and lowered in a shallow pit or staple at the back of the engine. When the cages are at meetings the chain is all resting at the bottom of the pit; it is then raised gradually from the bottom by the working of the engine, and retards it until the cage arrives at the top; when the cages start again the weight of the chain assists the engine until the meeting point, when it is found all resting on the bottom of the staple, as before. Another method is the pendulum counterbalance, still in use at the Cramlington Collieries, having besides the advantage of the use of flat hemp ropes to assist its action. The pendulum with a heavy weight at one end of it, and fixed at the other, is from its connection with the engine shaft lowered and raised in each winding so as to assist and retard the engine where needed. M. E.

MESSRS. ASHWORTH AND SMETHURST ON SAFETY-LAMPS.

SIR,—You may take it from me that I know as much about fire-damp as Messrs. Ashworth and Smethurst, and I beg leave to say that I do not concur in their remarks where they say that a "Scotch lamp was not to be classed as a safety-lamp, and where used as such immediate steps should be taken to replace it with a proper safety-lamp." I venture to affirm—

That it gives more light than any other safety-lamp, and it gives an upward light, which the others do not give to nearly the same extent.

That if a man goes into fire-damp with it the gas explodes inside but not outside of it, and he is enabled to come out without being burned.

The severe test of currents must necessarily be more trying on it than others; but still we must not hastily condemn a useful instrument because it is not perfect. If such a criterion were insisted upon the "Davy" would be nowhere.

If these gentlemen look up the Report of the Manchester District Inspector (Mr. Dickinson) for 1877 they will see many fatal and non-fatal accidents which might not have happened had the Scotch lamp been used by the sufferers. AN ENGINEER.

COLLIERY EXPLOSIONS.

SIR,—In the Journal of March 22 you were kind enough to give my observations on how it was possible for the flash of a "shot" to ignite fire-damp not present previous to that flash. I then ventured the theory that the sudden relief of pressure coupled with the sudden and enormous rise in temperature might give a speed to the sudden development of gases greater than the speed of the flash. Now, in support of that theory, which may be right or wrong, or partially so, I have to add as follows:—

The gases generated by gunpowder at the moment of explosion occupy about 1000 times the space of the gunpowder, and at a temperature of 2200° centigrade, equal to about 4000° Fahr., the action from which is easily explained, thus: The hydrogen in the coal would combine with the carbon in proportion to the temperature, and so form the true carburetted hydrogen, while the oxygen in the coal would combine with the carbon, making carbonic acid. Here we have present the ingredients, together with heat, ready to combine chemically in forming fire-damp and choke-damp, and when it is known that the heat of 4000° Fahr. is three or four times that necessary to ignite hydrogen, the extreme danger of using gunpowder in blasting coal becomes prominently apparent. It is, in fact, making the very danger we so strenuously desire to avoid.

We know that a cubic foot of solid coal weighs about 80 lbs., and contains (say) 4 lbs. of hydrogen and 5 lbs. of oxygen, and that the hydrogen when combined with the carbon would make about 450 cubic feet of carburetted hydrogen, also the oxygen would make about 9 lbs. of carbonic oxide. But we only know it as appertaining to the coal when it is out of the seam for days or months. But do we really know anything of the circumstances and state of the components of that cubic foot while it is yet untouched and away in the seam where it may have been for millions of years? I doubt it. My belief is that the hydrogen and oxygen are there liquefied by the enormous pressure, in which case their expansion to gas on the sudden relief of that pressure by the effect of the "shot" would be near 2000 times their liquid volume, added to which would also be the expansion caused by the enormous heat of 4000° Fahr.—say, 10 times the gaseous volume. Now, this argument shows that "shot firing" may generate instantaneously an "explosive gas" in mines by the expansion of fluid to 20,000 volumes of gas in the same moment of time. J. D. SHAKESPEAR.

Baron's Court, Fulham, April 3.

THE LONDON COAL SUPPLY.

SIR,—My peroration in last week's Journal has released the captive balloon, inflated with an ostracism identical with what existed at Athens when the people were called upon to pronounce, by way of suffrage, on the expulsion of a citizen whose power was dreaded. In plain native vernacular the conveyance of the coal in sacks, constituting the isolated simulated objective plea during the course of my year's exhaustive correspondence in the Journal is dissipated, the margin of several shillings per ton saving through conveyance in bulk alone being exuberantly sufficient to annihilate the transport of coal by rail, the official return for last year showing an infinitesimal fraction of over one quarter per cent. of the aggregate metropolitan import to have been seaborne from the Humber ports, in average cargoes of 68 tons per vessel, far short of what many a London or Regent's Canal lighter carries from the derrick, &c., and from Limehouse Dock. The difference between a painting in oils and a varnished chromo-lithograph is absolutely inappreciable by the following leader guides, surrendering their will, judgment, and powers of independent action, but when a transparent question arises of a saving of upwards of two million pounds sterling a year by the adoption of my system in the supply of the Metropolis alone with coal, muni, the most precious relic of Buddhism, which could be viewed by four hundred millions of the earth's inhabitants as a prize worth countless wealth is utopian, the system I propose is no matter of hypothesis, but a reality, and so declared by the highest practical authority, whose report has been perused by numerous parties interested. It is not requisite to empanel any jury, as the verdict has been given in unequivocal terms in favour of an immense saving in cost of carriage by water over rail by the Chairman of the London

and North-Western Railway Company, the Chairman of the Great Eastern, the general managers of the Midland, Great Northern, and Great Eastern Railway Companies, and by multifarious Government and other highest class authorities. It is, then, utterly impossible for the dual parallel lines of metal on the earth's surface to compete in economy of transport with the argosies of the expansive ocean, propelled at a suitable and practical rate of speed. The fact is all but incredible to think of how much has been done to change the very face of the world by thoughtful men doing that which at the moment seemed utterly profitless. How full is engineering and mechanics of this. Nature does her work in strange ways, the mysteries of the unknown being spelt out by those only to whom it has been given to do such work. No pains is spared to minimise the cost of transport and attendant expenses on cotton from India and America, silk from China and Japan, tea from China and India, sugar from the East and West Indies, spices from Arabia, cereals from California and Australia, wood from Europe and America, and shall coal continue to be muled in its supply to one place alone to the extent of upwards of two million pounds sterling a year, to the immense detriment of the coalowners and miners and the metropolitan consumers? WILLIAM JOSEPH THOMPSON.

20, Little Tower-street, E.C., April 2.

THE WYNAAD (INDIA) GOLD FIELDS.

SIR,—I observe in the Journal of March 22 a letter referring to the delay of the publication of Mr. R. Brough Smyth's official report of the gold reefs in the Wynaad, Southern India. The delay has possibly been intentional, which the Government of India has a perfect right to observe, at least until it has secured from the different independent rajahs and zemindars of the district the royalty or mineral and mining rights in order that it may in return for the expense recently incurred for prospecting and confirming previous reports add to the Indian revenue the immense wealth which will in all probability accrue from the granting of mining leases to intending speculators. In several places I have found auriferous reefs where it would be impossible to carry on extensive gold mining operations, owing to the limited quantity of local water. This impediment could be easily and inexpensively remedied by the construction of tramways for the conveyance of the quartz to the Saeputtee and one or two other permanent streams where there is ten times more water than sufficient, available throughout the year, than would be required for all the reefs within an area of 20 miles.

The Wynaad Prospecting Company has sufficient water throughout the year for working 40 stamp heads. The Alpha and Prince of Wales Companies have only a small stream between them, scarcely sufficient to work 15 stamp heads more than six months in the year. It is not improbable that the report of Mr. Oliver Pegler may not have conveyed a very correct impression respecting the auriferous reefs in the Wynaad. I cannot understand his reason for undertaking to publish a report, he never having seen a gold mine or even an auriferous reef until he accompanied me to the Wynaad, and visited the different localities pointed out to him by me in the year 1877; consequently it may be that the less the public is influenced by his impressions the better.

It is quite correct the existence of reefs does not afford any evidence that gold mining can be profitably carried on, but in the many reefs prospected by me in the Wynaad I invariably found gold, not only in the outcrop and a few feet under the surface but also in the small streams and on the sides of the ravines in the immediate neighbourhood that have been washed there during the rains from the decomposed quartz separated from the reefs in earlier ages by denudation; such evidences as these are to the practical gold miner invariably true indications of mineral wealth. From my experience as a practical gold miner during the last 28 years in California and Australia I have no hesitation in saying I have more confidence in the South-East Wynaad reefs proving remunerative than those I have hitherto prospected. Any information I can give to intending speculators I shall be most happy to do so. EDWIN HARRIS.

Cardew House, Redruth, April 1. Late Manager of the Alpha Mines.

GOLD MINING IN BRAZIL.

SIR,—In the year 1693 a Portuguese adventurer—Antonio Rodrigues Argao—accompanied by 50 followers, started from one of the seaboard provinces of Brazil on an excursion into the interior of the country, and brought back with him ½ oz. of gold dust which he had extracted somewhere on the Doce river. Those territories were then inhabited only by Indian tribes, a savage and formidable foe, and hardly inclined to let the white strangers take a leisurely look at the bright and glittering pages of Nature's book in this richest part of Brazil. Another Portuguese—Barba Gato—soon afterwards discovered the gold on the Rio das Velhas, the deposits of which he communicated to the Government on condition of being pardoned for having murdered a high official during his travels in the interior. A few years later, in the beginning of last century, the highland of Minas Geraes had already become the new El Dorado for thousands of gold seekers and other adventurers. The present town of Ouro Prato (not far from the Don Pedro Minas) was the common centre of attraction, and from its distinguished opulence acquired the name of Villa Rica (rich town).

Since the discovery to the present time the total quantity of gold extracted in Brazil may be computed in round figures at two millions of pounds Troy. By far the greatest proportion of this has been derived from alluvial deposits by river washing. Along the Rio das Velhas and its tributaries, as well as those of the Doce river, thousands of rubbish heaps and washed gravel, much to the detriment of agricultural interests, give ample evidence of the great amount of work performed in the search for the precious metal. The principal period of Brazilian gravel washing has been from 1695 to about 1825. It took, therefore, about 130 years to exhaust the deposits of wealth which Nature's never-resting mine work during thousands of years has extracted from the original matrix, concentrated and stored up in the river beds. This is, in comparison with more modern gold fields, a long period. The present generation of gold washers and hydraulic companies, with all the powerful appliances, would certainly have made a much shorter job of it.

The alluvial gold once exhausted, or nearly so, the natural consequence was to look for the original seat of the metal—the veins and ledges in the mountains adjacent to the rivers and brooks where gold had been found, and herein the ancient Portuguese, although mostly men of agricultural pursuits, have shown not a little skill and perseverance; they have discovered and explored in an uncultivated country, overgrown with a wild vegetation, numerous auriferous lodes. But the subsequent development of their mines is in most cases a monument of a rather rude and reckless mode of mining—a superficial scratching of the ground here and there, picking out the eyes of the mine—inability to cope with the water, as soon as this element intruded in any quantity on a run of ground it was knacked; these are about the principal features of many a Brazilian original mine which had deserved a better fate. The law of inheritance, too, according to which after the decease of one parent an estate is divided in parts among the surviving parent and children, has not been conducive to successful mining by the native proprietors. Mining, which before all industrial enterprise requires most the benefits of unity, joint labour, and capital, is thereby frequently reduced either to entire ruin or to a lingering profitless state of existence.

Such was Brazilian gold mining in the beginning of this century, but with the year 1825 a new era was inaugurated by the introduction of English capital and mining skill. The Imperial Brazilian Mining Association took the start in that year on the celebrated Gongo Soco Mines. The great success of this undertaking in the very beginning of its operations brought six more companies into existence. One only out of the six—the St. John del Rey—survived, and repaid, and much more, the large advances which were required for its development, having brought the property at one time to four times its original market value. It still stands, after 50 years of working, the Nestor of English foreign mines, foremost in the rank of public gold mining companies.

Again, the great prosperity of this mine during the last decade favoured the introduction of a number of undertakings; some of

these also failed to realise the prospects originally held out; some by perseverance are beginning to make up for past trouble and anxiety. I have already mentioned what the Don Pedro Mine has done, and what it is likely to become again, and now we have the pleasure of seeing the Santa Barbara Company's mine at Pari taking rank amongst the best paying foreign mines.

There have been prizes and blanks in Brazilian mining by English capital, the former as exalting and pleasing as the latter were debasing and disappointing. The causes of the failures, however, must not in all cases be looked for in unproductive capabilities of the miner and the mining district, but rather in those adverse circumstances which so frequently beset gold mining in its infancy. And so there are more prizes yet in store, probably without the same proportion of blanks, which by past experience, gathered from success and failure, ought to be and will diminish in future.

It has sometimes been a subject of controversy whether gold veins and lodes retain their auriferous properties at a greater distance from the earth's surface, or whether they are productive only at shallow depths. Experience in some mining districts has much favoured the latter opinion, but the mines in Brazil which have been more vigorously worked go far to prove that gold mining may be carried on remuneratively in depth—even at 200 and more fathoms—and that the precious metal even augments with increasing depth. Considering, therefore, that most Brazilian mines have been but superficially tried—considering, further, that Nature by atmospheric influences, through removing millions of pounds of gold from the ledges, has also worked only superficially, comparatively speaking, we may still claim for Minas Geraes the name of a rich gold district. In another letter I will give you some notes thereon of a geographical, geological, and technical description.

FRED. DIETZSCH.

Darmstadt, March 30.

RICHMOND MINING COMPANY—THE SECRETARYSHIP.

SIR,—I am unable to understand, as I know are many other shareholders in the Richmond Mine, why for the last two years we have had a secretary who signs his name with a *pro tem*. If he is incapable of properly conducting the business it would be the wisest course to appoint some one who can, and if he is I think it would be better to appoint him permanently to the office. Now, as far as I can judge, I believe him to be quite capable, as I have found that he is fully up in the necessary details, and I feel certain that the business of the office has been conducted in a much better manner during the last two years than previously, and I believe him to be not only reliable, and what is called straightforward, but also painstaking and courteous, and I am sure his permanent appointment would give very general satisfaction.

DELTA.

April 2.

THARSIS COMPANY.

SIR,—With reference to the action attacking the title of this company at present pending in Paris, and the decision on which should be given to-morrow, I beg as a lawyer to make the following remarks:—1. That the reason why the Tharsis Company has hitherto not appeared in the suit is the obvious one—that the French courts have no jurisdiction against a Scotchman or a Scotch company. The Tharsis Company is only amenable to the jurisdiction of the Court of Session in Edinburgh, and possibly to the Spanish courts. 2. As to the merits of the action, it is admitted there has been a conveyance to the Tharsis Company of the mines, and the Tharsis Company have got delivery, and it follows that the transferees had the power to give delivery. If, therefore, the transferees had not paid the price to their authors, which is all that is alleged in the action; all that follows from this is that the unpaid price is a debt against the transferees, and as the Tharsis Company have adopted all the liabilities of the transferees, a debt against the Tharsis Company. It is, moreover, a debt for which the Tharsis Company have by their bargain with the transferees discharged any right they might otherwise have had of relief. The sole question, therefore, affecting the Tharsis shareholders is what is the amount of this debt—whatever it be it must be paid. This is Scotch and English law. I know nothing about Spanish law, but in this particular I should suppose its the same. Irrespective of these considerations, I would have come to this conclusion from the known excellence and intelligence of the Tharsis direction, which further induces me to think that the liability, such as it is, cannot be for any serious sum.

I enclose a circular which has been extensively circulated here; I do so not to discuss the facts or conclusions of the circular, but to make the remark that, whereas in 1873 the price of copper, on which the prosperity of the company depends, was an average of 83 $\frac{1}{2}$ when the dividend was 25 per cent., and was last year 17 $\frac{1}{2}$ per cent. when copper averaged 69 $\frac{1}{2}$ 10s., or a difference of 13 $\frac{1}{2}$ 10s.; this conclusively proves the excellence of the Tharsis management, and gives reason to hope that the subsequent fall in copper, which is now 56 $\frac{1}{2}$ 10s., is not likely to have the disastrous effect predicted by the writer of the circular, and I have further to add that copper seems at last on the way to recovery.

A LAWYER.

IS IT RIGHT TO PAY PURCHASE MONEY FOR MINES?

SIR,—Mr. Stuart, in writing on the above subject, by using the words "almost invariably," is clearly of opinion that there are exceptions to the rule as he holds it; and I should presume the Silver Islet Mine is one of those exceptions. He does not tell us what has been the cost of producing the 160,000 $\frac{1}{2}$ of sterling silver; but, as he speaks of wonderful results in connection with that produce, we may assume that the shareholders have realised wonderful dividends. Now, I should like to ask Mr. Stuart, if the Silver Islet Mine is capable of yearly repetitions of the same wonderful results, would the shareholders be disposed, or would he recommend them as a man of business, to part with the mine without any payment being made for it except royalties? Assuming that the Silver Islet can pay a dividend of 100 per cent., which I should call a "wonderful result," I think every reader must see, and Mr. Stuart must see, that the shareholders would want a "wonderful" price for such an El Dorado. The mine which Mr. Stuart so well represents is, according to all he states, one of a very different character. How does it happen that if the mine has been in the possession of the present company for 30 years, and they have expended over 60,000 $\frac{1}{2}$ in exploring the royalty, that he only tells us of "probable profitable results?" Practical and scientific opinion in America is all very good in its way, but capitalists would like to know, in a mine of this character, what amount of dividend has been paid by the company. The absence of all information on this vital preliminary question in Mr. Stuart's letter leads me to infer that the 60,000 $\frac{1}{2}$ has been sunk and no returns as yet have been made. I do not say that is the fact, for I know nothing about the mine; but if it is, then it is no surprise that capitalists will not look at a mine which has yielded no dividends. Whether the 60,000 $\frac{1}{2}$ have been expended during 30 years I know not; but in that period a royalty of 40 square miles of the most valuable mining lands on the north shore of Lake Superior ought to have been the most valuable working mine in Canada, or in any other country. Clearly no one would expect to pay any purchase-money for a royalty which, after 30 years' working, its representative has nothing better to tell us than "probable profitable results." It would be most interesting if Mr. Stuart would explain what has been done to develop this immense royalty, large enough for a German prince to rule over; and how it is (if I am right in my assumption) that no profit has been made hitherto? An expenditure of 60,000 $\frac{1}{2}$ spread over 30 years is not very much in the shape of wages—only 2000 $\frac{1}{2}$ a year. The royalty may be all that Mr. Stuart represents it to be, and far more; but he has put forward a most unsatisfactory letter. Nothing can be more so than that such a royalty should, after 30 years' working, be requiring capital for its development. An explanation, no doubt, can be given; but, judging from what Mr. Stuart says, I am not surprised that his mission has, so far, been unsuccessful. As his case stands there is no practical inducement given in its past history for anyone to take the mine. If no good results have been obtained the case looks like this 60,000 $\frac{1}{2}$ having been sunk in exploring the territory, and more capital is required for further development, with the expectation of probable profitable results. Surely Mr. Stuart can give us a better version of the history of the mine than that.

Since I wrote so far Mr. Stuart has, with obliging courtesy, sent me several interesting particulars respecting his mine, and also the Silver Islet, but as my object is to maintain my position that a really valuable, profitable mine is worth paying purchase-money for, I will leave Mr. Stuart, who is so familiar with both mines, to give such explanations as he may think proper. I will only say that if half the statements put forth in the papers he has sent me can be substantiated by results the mine he represents ought to become a valuable property.

In reference to the position I have taken up, I should like to ask Mr. Stuart one question. He refers to the Calumet and Hecla Mine. In 1876 this mine was to yield 8000 tons of copper, and divide three million of dollars amongst its proprietors. Assuming that this mine can yearly produce such a "wonderful result," would he, as a practical man, say the proprietors if they wished to sell it should do so without any purchase-money being paid? I think he would say no, but they should receive a very large sum.

Ulverston, April 3.

WILLIAM SALMON.

"DE OMNIBUS REBUS."

SIR,—It is only too evident that the Don Pedro Mine is suffering from another phase of the penny-wise-and-pound-foolish system of the directors. These gentlemen having already signalled themselves by buying, and for years neglecting to put up, expensive pumping machinery, seem inclined to repeat the same policy in trying to patch up a badly-constructed worthless water-wheel. Spending thousands per annum in abortive explorations for gold they grudge a few hundreds to buy a new water-wheel. This wheel ought from the first to have been made of wrought-iron, in pieces to be bolted and riveted together at the mine, all heavy pieces, such as axles, &c., made of wrought iron, and hollow. That Messrs. Harvey should have made such a wheel in cast-iron, and solid axles in pieces, shows a stupidity and poverty of invention and constructive ability by no means creditable to them. As it is so plainly proved that the future of the Don Pedro depends entirely on the water-wheel, in the name of common sense let a new and properly constructed wheel be at once sent out. The present directors must be mad men of business, for if they chose to take the trouble to compare the cost of patching the wheel, loss of time, labour, &c., with the cost of a new wheel, they would hesitate no longer to order one. Meanwhile Capt. Vivian is "revolving plans in his mind" to re-patch the wheel, and the wheel meantime is "revolving" to destruction, and the water getting into the mine again to require months to pump it out. Perhaps, if the shareholders "revolve" the matter in their minds they would decide to elect new directors, on the principle of a "new broom sweeps clean," and we shall hear of common sense and energetic management.

The cloud hanging over the Colorado United Mines promises to lift; however, the directors have publicly promised investigation of the truth of the reports lately published in the Journal. Could the recent attempt to float that Utah mine have been influenced by the success of the so-called Colorado "job"?

Sir, we have rubbed shoulders with our money-making-by-any-means American cousins that we have at last been inoculated with the virus of the money plague. Even our titled aristocracy are turning to profit the *clat* and influence of their names and titles to the floating of sundry companies—laundry companies as well. Do they not fear to tarnish the brightness of their coronets by contact with dirty linen?

Let me venture to hint, Sir, what I think would be a great improvement to your Share List—give no "nominal quotations," but only quotations of actual sales of shares, and put a pen through all wound-up mines. I know for certain of several mines quoted at pounds, for the shares of which the promoters themselves would not give as many shillings. It is a gross deception to adopt in your columns an air of engaging frankness about our own "ugly duckling" when we are secretly conscious that it is completely worthless.

NIL ADMIRARI.

THE POLITICAL IMPORTANCE OF MINING.

SIR,—The debate in the House of Lords on Friday last on the Marquis of Huntley's motion for enquiry into the depressed condition of agriculture and trade was illustrated by a remarkable speech by Lord Beaconsfield, in the course of which he assigned as one of the three main sources of the existing depression, following on a time of exceptional commercial animation, "the falling off in the production of gold, and the consequent reaction from the effect of the Californian discoveries, which in five years added 150 millions sterling to the stock of gold, which had only, for many years previous, received about six millions per annum."

On reading the first authentic accounts of the Californian discoveries I was so impressed with the political and commercial results certain to ensue that on Feb. 25, 1850, I wrote a letter to the Mark Lane Express, published in that journal on April 1, 1850, in which, basing my argument on the effects which followed the discoveries in Mexico and Peru in the 16th century, I suggested that in a few years a favourable opportunity would be certain to offer, during a period when money would be so plentiful and interest so low, for virtually sweeping away a large proportion of the National Debt by paying it off, and borrowing anew on lower terms, or by terminable annuities. I also pointed out that gold would be depreciated at least 25 per cent., and that land and wages, with all the results of labour, would have a corresponding advance, and that the agricultural interest might safely dispense with protection in the face of the fact that Nature was giving them abundant compensation through this sudden addition to the stock of gold. I stated that "Mexico and Peru in one hundred years virtually destroyed nine-tenths of the previous value of the stock of gold in Europe. California will not create so great a depreciation as this, because there is now so much larger a stock than then, but it will cause an enormous fall in the present value of a sovereign, and the effect produced will, owing to the immense means at the command of civilised man in these days, take place in one quarter the time which the former discoveries required to effect the revolution in question. There are already 200,000 inhabitants in California, and the numbers are increasing with astounding rapidity. The effect of their labours within the next five years must lower the value of the existing stock of gold in Europe at least one-fourth. England will be the main channel through which the newly-raised treasure will find its way to the Continent. There will, therefore, inevitably be a time when a glut of gold to an immense extent will exist in this country. There will be a period when moneyed capital will be extraordinarily cheap, and interest exceedingly low, and then will be the time for the nation to pay off the whole of her creditors, and to borrow the money anew at the then existing rate of interest, which, I believe, in less than five years will be reduced to five per cent." The vast cost of the Crimean war, and the lavish scattering of hundreds of millions on war, disturbed these calculations, but they were realised to a sufficient extent to justify my prediction.

I did not touch on the question on the equally important bearing on political and commercial matters of the great additions making to the stocks of silver. So long as that metal is the currency of three-fourths of the human race, it will be as susceptible to fluctuations by addition or falling off in supply as the gold currency, and the relative difference in value between the two will continue to change in proportion as the one increases in quantity over the other. Mischievous legislation may hasten or intensify the fluctuations, but no human laws can prevent them. I do not think the Premier, in his masterly speech, gave sufficient prominence to the silver question, which is so seriously disturbing our Indian Empire. I believe that we are on the eve of obtaining larger additions than ever to the stock of silver, which will thus become of still lower value to gold, but I also think that a vast increase to the supply of the latter precious metal will be shortly forthcoming as the result of new discoveries, and the great probability of the successful application of chemistry to the obtaining gold at a profit from the existing proved masses of refractory ores and the prevention of the present average loss of one-third in the existing methods of reduction. The agricultural interest is clearly the most important to any nation, but its prosperity is greatly dependent on the state of mining

operations throughout the world. Statesmen may talk and legislate, but their acts are modified and swayed by the practical results of mining enterprise.—April 2.

JOHN ELLIOTT.

THE HOLLWAY PROCESS.

SIR,—A good deal has been written in the Journal on Mr. Hollway's process, but there is one very important point which seems to have been somewhat lost sight of—what is intended to be done with the sulphur supposing that it can be successfully condensed? The sulphur would, of course, contain arsenic if made from such ore as Rio Tinto, and would, therefore, not be suitable for the great number of purposes for which "brimstone" is used. It must, to be sold in quantity, be used by the alkali and manure manufacturers, who at present use the pyrites supplied by the Rio Tinto, Tharsis, and Mason and Barry's Companies, &c. As, however, the consumers are at present fully supplied at an average price of 6d. per unit for sulphur, it is evident that to use the sulphur made by the Hollway process it must supersede the pyrites. As the alkali manufacturers make the sulphur contained in the pyrites available within 5 to 6 per cent., which is left in the residue, or "cinders," it follows that they pay about 55s. per ton of 100 units of sulphur of 21 cwt. to the ton. The difference between burning brimstone or Hollway's process sulphur would not amount to a great deal, and supposing 5s. per ton was allowed for this, and likewise about 5s. for saving in carriage (the pyrites only containing about 50 per cent. sulphur), the essential questions that suggest themselves are—

1.—Can Mr. Hollway produce and deliver the arsenical sulphur at about 3 $\frac{1}{2}$ 5s. per ton?

2.—Will such companies as the Tharsis allow themselves to be cut out of the market for their pyrites—which likewise would close their vast copper extraction works—and the manufacture of "purple iron ore" which is rapidly making its way with the ironmasters as a source of steel making material?

Mr. Hollway's process seems to depend a good deal on the value of the sulphur produced, and though I am far from wishing to run down any new invention, still in examining into the merits of any new process the first points to ascertain are—Is there a sufficient market for the products on the sale of which the success of the process depends? and next, can these products be produced at a paying price?—Newcastle-on-Tyne, March 31.

W. A. H.

LEAD MINING IN THE NORTH OF ENGLAND.

SIR,—As considerable prominence has been given to the accounts of the recent extraordinary discovery at the Green Horth Lead Mine, perhaps you will kindly allow space for the insertion of a few particulars respecting a neighbouring mine, known as the Teesdale, and the property of the Teesdale Mining Company. This mine, which was started by the present company three or four years ago, has always been one of considerable promise, but owing to the continued depression of trade, and the extremely low price of lead ore, the company was obliged in the spring of 1878 to suspend operations, the exhaustion of their capital necessitating the adoption of such a course.

An extraordinary meeting of shareholders was held, and a committee was appointed to go thoroughly into the company's affairs, and to take whatever measures might be necessary for the continuation of operations. These gentlemen procured the services of two mining engineers of repute, both of whom made a thorough examination of the property, and reported separately upon its prospects. These reports were submitted to an adjourned meeting of shareholders, and they quite convinced all present who knew anything at all about mining matters that the company possessed a very valuable mine, and that a little more patience and capital would soon free them from all embarrassments, and place the concern in a dividend-paying condition.

Eventually a little more capital was subscribed, and the mine placed under the control of one of the directors, whose practical knowledge of mining fully justified the very sanguine opinions that he entertained of the future. Since that time the anticipations of the manager and directors have been fully realised. Good ore was discovered almost immediately after the resumption of operations, and the improvement in each week's working has been so marked that the mine is now modestly but surely winning for itself the reputation of being one of the best in the North of England.

The greatest drawback, and one which threatened to frustrate the efforts of the management, was the continued and almost unprecedented severity of the weather during the last six months, which prevented ore being dressed or sent to market, the mine being situated on the higher reaches of the River Tees, and almost inaccessible in exceedingly stormy weather. However, this drawback has been removed by these last few days fine weather, and the machinery being good, and the accumulation of bowse being very large, ore will be got away to market rapidly. The ore has a splendid appearance, and is considered by the buyers to be as good or better than any sampled in the district. This being so, and the mine being worth in some parts from 5 to 7 tons to the fathom, there cannot fail to be left a very handsome margin of profit to the adventurers. I must apologise for taking up so much of your space, but I have no doubt that these particulars will be read with interest by many of the non-resident shareholders, who have not the facilities for receiving information afforded to others residing near the offices of the company.—Newcastle-on-Tyne, March 31.

VEDRETTE.

GREAT LAXEY MINE.

SIR,—I ventured to call attention after the last half-yearly meeting to the balance-sheet then presented. No notice was taken of my letter by anyone. The balance-sheet for the half-year ending February has just reached me, and this time I send you a few remarks upon it before the meeting, thinking that possibly some explanation may be given of the points referred to.

As before, I say that no one can tell from the balance-sheet, taken *per se*, what the actual profit and loss of the half-year has been. This is a grave defect, and it ought not to be necessary for a shareholder to be obliged to collect figures from a former account in order to ascertain what the mine is doing. Last half-year, as I showed in my former letter, the net profits were 6349 $\frac{1}{2}$. The directors divided 12,000 $\frac{1}{2}$. This half-year the profits, taking into consideration the decreased value of the stock from 7591 $\frac{1}{2}$ to 6789 $\frac{1}{2}$, have been 4625 $\frac{1}{2}$; the dividends declared 8250 $\frac{1}{2}$. In other words, the profits for the year have been 10,974 $\frac{1}{2}$, and the dividends for the same period 20,250 $\frac{1}{2}$. Now, these are figures which not even the Chairman, with all his rhetoric, can explain away. How much longer can this depletion of the life blood of the company be carried on? Will the directors again venture to declare a dividend for the quarter, or will they come forward like honest men and confess that the dividends have been unduly large and unwisely declared, and that they must bring this great and valuable mine into a proper and sound financial condition? I said in my last that the Chairman seemed to look upon the reserve fund mainly as a means of equalising dividends. That I did not misrepresent him is evident, for 2000 $\frac{1}{2}$ has been abstracted from it this half-year to make up dividends. Now, I maintain that the true object of a reserve fund is to supply the place to a mine with limited liability of uncalled capital. It is utterly wrong to divide that mainstay of an undertaking in the face of decreasing profits. Time was when the Chairman, expatiating upon the advantages of a reserve fund, declared that by means of it the necessity for discounting ore bills and borrowing from bankers would be done away with. Here we are in the mud again—ore bills constantly discounted, and the mine in debt to its bankers on current account. True, it appears that there is a cash balance at bankers of 1115 $\frac{1}{2}$, but if we turn to the steamship account we find a balance due to bankers of 2652 $\frac{1}{2}$, so that on Feb. 7 the bank balance was actually 1537 $\frac{1}{2}$, the wrong way; and I must ask again why is this steamship account kept in the way it is? Why should it be in debt to its bankers when there is the sum of 4548 $\frac{1}{2}$ (1) due to it from the mining company? The inference is that it is so kept because the mining account would look very awkward indeed if the steamship account were kept straight.

I observe that the stock of ore estimated to be contained in the

"toppings" is put at the same price per ton as that actually ready for sale. Why is there not an estimate of the expense (by no means an inconsiderable one) required to be expended upon these "toppings" before the ore and blende, valued at £4637, can be made fit for sale? This would materially alter the amount of that asset. The directors say that they hope the balance-sheet will prove satisfactory. If they can show that their conduct has not been like that of "The soldier who lives on his pay, and spends half-a-crown out of sixpence a day," it will be more satisfactory than it is at present to—
March 31. A SHAREHOLDER.

GREAT LAXEY MINE RULES AND REGULATIONS.

SIR.—From the orders recently issued by the directors of this mine, and published in the Journal of March 22, it seems that the men in future have to work an hour each shift extra, and that they must work until 10 or 11 o'clock on Saturday nights. They are furthermore to be deprived of holidays allowed to other classes of bread-winners, who work, free from danger, in the broad open light of day, and all this upon as scanty an allowance of earnings as can possibly be devised for the existence of man. Can this be a correct construction of that public document, or am I fortunately mistaken?
London, April 3. ENQUIRER.

SOUTH CAMBRIAN MINING COMPANY.

SIR.—As the secretary of the above company, I have received several letters from shareholders calling my attention to a letter in the Supplement to the Journal of March 22, headed Mines and Mining in Cardiganshire, and signed with the initials "G. J." in which is contained the following sentence:—"Your correspondent can venture to undertake to find room in the British Museum for any ore, lead or blende, which can be taken from that concern (the South Cambrian) yet awhile."

As reports have regularly appeared each month in the Journal, signed by the mine manager, Capt. Andrew Williams, since the month of August last, showing the work done at the mine, and during such work that a large amount of mineral has been laid bare sufficient to ensure large returns as well as an increasing store at surface in readiness for the machinery when erected, which will be done as speedily as the nature of the work will allow, I should myself have thought it unnecessary to have made any reply to the statement of your correspondent, and should have left the signed statements of the respectable mine manager, Capt. Andrew Williams, to be a sufficient voucher for the absolute truth of his reports as against the statements of any other writer, the one speaking of matters within his own knowledge and from under his own eye, whilst the other, drawing upon his imagination, is evidently writing about what he has not taken the trouble to inspect, and of which, therefore, he can know nothing; but as the minds of some of the shareholders who have not had the opportunity of inspecting the mines for themselves have evidently been disturbed by your correspondent's venturesome statement, instead of replying to them individually, I, through the Journal, request them to rely upon the statements of their own working manager, vouched as they are from time to time by his signature and date, showing the present productiveness and great promise of the South Cambrian as against the unvouched statement which an anonymous writer, to quote his own words, "may venture to undertake to make."
ARTHUR J. W. STINGER, Secretary.

29, Byrom-street, Manchester.
[The statements of the mine agent, Capt. Andrew Williams, in the reports which have regularly appeared in the Mining Journal, can leave no doubt that in his letter of March 22 "G. J." used something stronger than metaphor in declaring that "there is not as much lead or blende in the South Cambrian Mine as would make a specimen for the British Museum." A more complete refutation cannot be given than that contained in the communication of Capt. Absalom Francis, published in the Journal of Dec. 7. He states—

The South Cambrian is a parallel lode to that of the Cambrian, situated in the same measures, and standing south magnetic from it; the lode here, as in the case when the rich discovery just described at the Cambrian, is about 18 ft. wide. An adit level has been driven in from the west side of the hill eastward a distance of nearly 110 fms., and this adit has gained a height of 38 fms. from surface. The portion of the lode carried has for 65 fms. in length passed through a course of blende ore, and where the vein was last cut through, about 10 fms. behind the present forebrest, would yield about 5 tons of the richest blende ore produced in Cardiganshire, and will fetch at present prices 4s. per ton. This lode—from its softness and convenience of working, there now being an excellent railroad laid down through the adit, and the level itself out down to a width of 8 ft. 6 in. by 7 ft. high over the rails—can be taken away at 1s. 6d. per cubic or 34. 15s. per lineal fathom of the width of the vein, and after all expenses of every kind have been amply allowed for, would leave considerably more than one-third of the returns as profits for dividends. In extending the adit level eastward, and the present end is much richer than any portion we have seen, the present adit in 70 fms. more would gain a height of 65 fms., and this height must continue in one unbroken line, and without a depression of any kind for 600 fms. in length. Six men can lay open in the present forebrest 6 fms. per month, and at the present yield of 5 tons per fathom would lay open in driving 30 tons per month, and taking an average of only 20 fms. high we should get at 600 tons of blende laid open per month.

Added to this the executive state that the development of the South Cambrian Mine as the working has progressed has laid bare a large amount of blende ore sufficient to be profitably worked and to ensure good returns on the capital invested; that they have a considerable quantity at surface; that the breast of the adit is the richest part of the mine; and that, in fact, they have one of the richest mines in the kingdom for profits. They court inspection and investigation, with every confidence that the most cautious capitalist will be satisfied with the prospects. In the face of such facts as these the expression of such opinions as that of "G. J." is at once regrettable and unjustifiable.]

WHEAL GRENVILLE.

SIR.—Probably all sensible men will condemn anyone who attempts to confute or rebut the anonymous, untruthful, and exaggerated statements of Peter of Old, whose moral character since the crowing of the barn door fowl evidently has not changed. Peter claims great merit for saying this and saying that, not relying on any good coming from the junction of the old lode with the flat lode, and many more wise things. Allow me to tell your readers that the present management have not seen the junction either in the western or north shaft. In the former the water has not yet been out, in the latter there is still a foot of granite between the two lodes. Can this be called a junction? It is not the present management who originated such flattering statements of a rich lode at the western shaft, but the reports of Peter Provis and the agents of Wheal Grenville years ago, who by their indefatigable ability and hard work for twelve months succeeded in sinking the shaft 18 inches. How many hundred tons of coal did they burn to accomplish this? Would they have continued at this rate? Decidedly, for all the present company have done is wrong. To put up an 80-in. engine, which is pumping one-third more water at less cost by 100 tons of coal a month, is the most absurd thing. To remodel the tin floors from a cock-pit to a creditable work place—to pull out a stamps-engine which shook and threatened to throw down the whole concern, and put in a new engine, capable of driving nearly double as many stamps heads—to throw away nearly 50 fms. of flat-rods, and, in short, to work the mine as any sensible man would do, shows Peter's conversion can never be, because he was kicked out.

The junction of the lodes not having been yet seen, Peter condemns driving east to the cross-course. Will Peter be honest? Where are the rich deposits of South France and West Basset being found at this moment? Is the deposit near a cross-course, or is it a dropper which produces the unusually rich tin? No, it is the cross-course near which it is found. The engine is on the wrong shaft says Peter. Four of the best managers of neighbouring mines recommended the engine to be erected where it is. Doubtless the everlasting hindrances of Peter's management have passed away. It is difficult to contain one's self while one reads Peter's virtuous statements about the promises of tin for the quarter. Peter never having had a good mine or paid but one dividend, and that by an extraordinary fluke, cannot understand any difference in the yield of tin in the stone. Any novice will tell you had the produce been now what it was in Peter's time the mine would return 30 tons a month. Peter has not the honesty to give you his experience, and tell you that at both West Basset and South France the stuff was so poor that the shares sold at 10s. each, and at the former mine a manager of a neighbouring mine was called in to consult with the

agents. He recommended stopping one of their stamps, and leaving the stuff underground.

At South Condurrow no lode could look more unkindly or poorer than the flat lode some years ago. No miner can say the lode is not as promising in Wheal Grenville as he has seen it in that mine. Peter tells you nothing about the value of tin; he says your reserves left by former agents at 60s. a ton are exhausted, because the ground was not worked when tin was but 34s. a ton. Evidently the present management are not such fools to bring away tin their very able predecessors could not make a profit out of at half the then price. I have known every agent of Wheal Grenville for the past 20 years, some of them intimately, and defy Peter Provis to produce any respectable agent in the county who will come forward and say the mine is not better worked, and in an infinitely better state, than when left by the Provis family. I abhor discussions under an assumed name, let the anonymous Peter Provis sign his real name, and we shall then know the value of statements if worth investigation, which are not at present.—April 3. H.

MINES AND MINING IN CARDIGANSHIRE.

SIR.—Capt. Absalom Francis, with the spirit of divination strong upon him, mistakes me for the gentleman who says he has invested 50000l. in Cardiganshire mines, so that his Goginan classics with regard to added eggs, Court Grange, and Mynydd Gorddu Mines, &c., come in in the wrong place, as much so as the Blaendyffryn pumps were in Goginan village. Changes are necessary at Court Grange and Mynydd Gorddu, I admit—in the case of the former a full resumption of operations from its present idle state; at Mynydd Gorddu a better price for lead is desirable. It may, however, be a matter of surprise if not disappointment to Capt. Francis to know that during March we dressed 35 tons of lead, which sold for 400l., at a cost of 200l., and this was obtained principally from one stopes in the back of the 24, worked by 14 men. We have in addition a good lode in the 12 west going into new ground with 20 fms. of cover, and the 34 is just entering the same rich ground we are stoping on in the 24. We dressed in March also 10 tons of good clean blende, which formerly sold for nearly 4l. per ton, but which at present will not much more than pay for carriage. A change in the price of this ore is much required before any mine producing blende only can hope to make profits; at least that is my humble opinion. If any other changes than these may be thought advisable at the above mines, possibly Capt. Francis may have a consultation fee, which will be satisfactory, and I have no doubt we shall have a highly favourable report from him.
Mynydd Gorddu Mines, April 3. JAMES G. GREEN.

WELSH GRANITE QUARRIES.

SIR.—Noticing a letter in last week's Journal signed by "Another Visitor, and would-be Investor of £4000," I would remark that the cost altogether for making sets in all the principal quarries and good sett properties does not average more than from 15s. to 15s. per ton, including everything (royalty, commission, &c.), f.o.b., and is worth from 17s. to 20s. per ton. A capital of from 10,000l. to 15,000l. is ample for working these quarries, and with the present demand and (say) from 100 to 150 sett makers working, the remuneration for capital is equal, and will bear comparison with any other branch of industry, especially in the present depressed state of commerce.

I am well aware that there are "takes" and small quarries with enormous amounts of money spent on them that no practical man will say will ever pay. I also know instances were sets have cost 30s. per ton and then been sold for less than 20s.; but there is no reason to condemn all because of the few failures made by mismanaged and falsely represented properties by those persons who neither want nor care for anything but the fee that is paid them for introducing the property to capitalists for sale. FAIR PLAY.

WELSH GRANITE QUARRIES.

SIR.—It is very gratifying to find from your correspondent's letter in last week's Journal that he feels "fully satisfied with the views he entertained of me," and I am glad to see that he also "is quite convinced it would be a very venturesome act on my part if I attempted to improve my 3 per cent. investments" by putting them in the granite sett quarries he refers to. I quite agree with him, and fully endorse this expression of his views. I am glad to notice by his letter that it is the Carnarvon Bay that is famous, and not the granite sett quarries; the Bay is very pretty, and no doubt may be famous for its fishing, but I am not disposed to snap at the bait even with a granite sett on the hook.

Your correspondent is kind enough to speak of "my utter want of knowledge on this subject," but I am not aware on perusing his letters that he has displayed very much knowledge on the subject himself, and at the same time he seems famous (as well as the Bay) for making "general" statements in one letter and contradicting them in the next, and I cannot find that he gives any "special" information *per se*, and it appears to me that he is utterly unable to refute the arguments in my previous letters, and thinks it advisable, therefore, and has the bad taste, to resort to personalities. I beg to say, therefore, Mr. Editor, that I shall not deign to notice any further communications from him, and beg to assure you I am all the more convinced that it would be "very venturesome indeed" to invest in those granite quarries along the famous Carnarvon Bay, and remain, as before—

ANOTHER VISITOR TO CARNARVON BAY DISTRICT,
AND WOULD-BE INVESTOR OF £4000.

London, April 2.

OLD HERODSFOT MINE.

SIR.—In the Supplement to last week's Journal appears a letter from somebody rejoicing in the euphonious name of Peter Goiffon. Now, it is passing strange that after over 20 years acquaintance with nearly all the mines and principal mining men of the kingdom I never heard of Mr. Peter Goiffon before, and having a very retentive memory I certainly could not have forgotten such a name. Probably this is Mr. Peter's first attempt to establish a reputation as a mining authority. I will, however, for the moment humour his idea, and regard him as such, and, Sir, with your kind indulgence make a few remarks on his letter. He asks whether I am aware that the pipe of lead, and here for a moment I must digress to remark Mr. Peter Goiffon's tact when intent on damaging a mine in adopting the technical phrase of a pipe, a term not used in Cornwall once a year, to describe a course of ore which gave over 64,000l. in dividends, not a very insignificant pipe I think he must admit. But to resume, Mr. Peter Goiffon asks me if I am aware that this pipe went down between two cross-courses dipping south, &c. My answer is that I am not aware of it, but if it were so I dare say this enlightened nineteenth century adept will admit that cross-courses are not usually considered objectionable after all. It is true that I have heard of a slide in the northern part of the old sett, and know that one of the shallow levels was driven through that slide into the newly acquired ground (which Master Peter affects to despise), and from a few fathoms only 360l. worth of ore extracted, very much richer in silver than that generally found on the southern side. This is not only a fact, but one fully established by the landlord of the 200 fms. of worthless ground (in Mr. P. Goiffon's opinion) having received the royalty on that amount. What does Mr. P. Goiffon say to that? There is an old saying, "That you can't have too much of a good thing," and if the Old Herodsfot paid 64,000l. profit on a mere pipe of ore going down I think friend Peter must admit that the addition of 360 fms. of ground immediately on the north, with the southern extremity of that ground proved rich, can prove no serious drawback after all.

In support of the statements in my former letter I can adduce the evidence of agents and other practical authorities of the Liskeard district, men well known in the world, like myself if Master Peter's remarks on the Goss (Tregosa) Moor Mines be true, but I anticipate my friend, let me call him so, for I cannot believe anybody bearing such a name as Peter Goiffon can be other than a well-meaning man, his hard at me as a coachbuilding expert. I do not growl much at that slap, for it goes far to prove I am an expert in at least one more trade than my clever friend Peter is, but I have been for hours scratching my head and adding my brains to work out the problem of how such a practical authority as Peter Goiffon, understanding apparently everything in mining, and assuming the right to school others, could allow himself to be misguided into the Goss Moor Mines by a mere coachbuilding expert. This passes my comprehension, is perfectly inexplicable to me, and must be explained by friend Peter himself. I presume that having plenty of money to spend he scarcely troubled to look after his own interests, but trusted to me—good easy soul. I am afraid Mr. P. Goiffon is hardly cautious enough to be a safe guide for others if this be the case. Now that we may better understand each other let me assure my friend Mr. Peter Goiffon that so far from misleading persons into mining in the district he speaks of, I was a bitter opponent to mining there, and in consequence made a great many enemies of those with whom I was previously friendly, and this fact is too well known to need further remark.

People do not usually waste time and writing material in abusing mines unless they have some selfish motive for doing so. I do not believe that Mr. Peter Goiffon possesses such a motive, or that he wrote this letter himself, although perhaps he was induced to append his mellifluous name to it. Take care Mr. Peter, if you allow yourself to be begged into a paper war on this subject you will be made a greater dupe than will those persons, according to your predictions, who spend their money in the Old Herodsfot Mine. My advice to Peter Goiffon, whoever he may be, is to forswear the pen for ever, take to pick and gad, and if he has a modicum of time left him he may perhaps even yet make himself somewhat of a miner.—April 3. WILLIAM DERRY.

OLD HERODSFOT MINE.

SIR.—Having seen the letters of Mr. William Derry and Mr. Peter Goiffon in your valuable Journal of March 22 and 29, I think I may make a few remarks thereon, as I endeavoured to put this mine to work two or three years ago, and I should have succeeded but for the depression which was then coming over mining in Cornwall. I fancy I acted on information that was more reliable than Mr. Goiffon's, as I doubt, from his remarks, if he has ever been underground, whilst I obtained mine from a man well known as a silver-lead miner—no other than my own brother (Capt. Henry Hodge), who was principal agent under Captain Peter Clynno at Wheal Mary Ann for 20 years, and he inspected this mine two or three times, and his advice to me was that if I ever had the opportunity I was to secure the sett as soon as the old lease expired, as, being a dry mine, it would pay large profits. I have also a book with statements signed by over 20 miners who worked there in the various levels, but as it would occupy too much of your space to quote them, I will merely remark that if Mr. P. Goiffon will call on me I will show him the book and statements. They all prove that the mine is still a valuable one, and that there are plenty of places where tribute pitches could be at once set as soon the footway is made good and levels cleared. I am quite satisfied to rely on the opinions of these 20 men more than that of one who I cannot suppose has ever seen the workings at either level. The 80 reported to be driven 3 fathoms into Gundryck's—the new 200 fathoms of ground added to the original sett—and this 8 fathoms produced lead ore to the value of 410l. Another miner says there is a good lode going under Gundryck's at the 106. Another states that one end going under the new land was boarded up when lead was cut, as the company had no right there. Two or three others make similar statements, so I am quite persuaded that the lode is still productive going north, and continues its course right into and most certainly through Gundryck's. I notice they have lately cut a new lode at Herodsfot. Perhaps this may likewise be found in this land, and if it is as valuable a pipe as the old one it will do remarkably well, but why a mining critic should call a lode of silver-lead in Cornwall a pipe of lead I cannot understand, without he hails from Derbyshire, where they have pipes, not lodes. I need not state here why the mine was abandoned, and the company persuaded to place their engine further south on a new grant, but will say this much, whether Mr. P. Goiffon knows it or not, that the late agent repeatedly endeavoured to obtain a new lease or to buy this property, but was always refused, and whoever has now got this mine I am firmly convinced has a dividend-paying property, and as soon as they clear up the old workings it will be shown who is right.
Plymouth, April 3. J. HODGE.

OLD HERODSFOT MINE.

SIR.—I notice the criticism of Mr. Peter Goiffon in last week's Journal on Mr. Wm. Derry's remarks on the above mine, and I should judge from his remarks that he knows very little about the mine, or it may be that he has interested motives in endeavouring to prevent dupes becoming shareholders, and putting their money into what he calls an exhausted lead property. Should Mr. Peter Goiffon be ignorant of the position of what is now termed the North Herodsfot property, he can satisfy himself that it is only a portion of what was called Old Herodsfot. The shaft in the present North Herodsfot being within a few feet of the present Herodsfot Mine, and that the levels are extended from this shaft into both mines; and it can be easily proved that hundreds of tons of silver lead was raised and sold from North Herodsfot before that part was abandoned, and it is well known in the locality that it was not abandoned from poverty, and that at the 80 fm. level there is a valuable lode, reported to be worth 15 cwt. of silver-lead to the fathom. This North Herodsfot being a dry mine, there are thousands of fathoms of ground to be stoped away as soon as drawing machinery is erected. Does P. G. profess to state that the vast quantities of silver-lead returned, and to be returned, from the Herodsfot Mine is from one pipe or shaft of ore only? I would call the attention of your readers to the discoveries being made by the present energetic agent of this mine, who states that there are thousands of fathoms of ground going north unexplored; and, notwithstanding the sneering remarks as to the coachbuilding expert, he may yet make a coach with a silver lining from the proceeds of the North Herodsfot.
April 1. E. BAWKIN.

OLD HERODSFOT MINE.

SIR.—In the Journal of March 22 a letter appeared on the above-named mine from Mr. Wm. Derry, and on the 29th another and not a very complimentary one, appears from Mr. Peter Goiffon (?) on the same subject, and introducing some little of past mining in the Goss Moor district. Not knowing anything of the latter I must leave Mr. Derry to deal with that himself, but I think a few remarks from me on the Herodsfot part of the business may not be out of place. A few months since I was requested to go and examine the sett, and to call on some of the men who formerly worked in the old mine, and get their opinions on its merits with a view to its future working by a new company, and all the men I met with fully corroborated the main statements of Mr. Derry's letter in the Journal of March 22, in fact, the same men are prepared to meet any parties interested and repeat the same statements if required to do so. After hearing the evidence of the men referred to above, and then very carefully reading the letter of Mr. P. Goiffon, I am fully convinced that one of the three following reasons induced him to write that letter.—1. To be revenged for the alleged Goss Moor business.—2. It may be some personal interest Peter Goiffon has in preventing the working of the north part of the mine; and, lastly, he may be totally unacquainted with the mine, or the opinions of the men who worked there, and possibly he may be offering counsel without knowledge. After my visit to the mine and the men, as above stated, I felt satisfied that the North Herodsfot Mine was well worth the attention of capitalists, as the mine can be re-opened at a comparatively small cost, and the shaft can be at once made available for drawing the stuff that may be necessary. I am also informed that few, if any, tributers were employed in the former working, and I have no doubt but that a large amount of ore would be raised by throwing open the mine to tributers as soon as the levels can be opened up for them to work. Speaking of the 200 fm. new ground, Mr. P. Goiffon very properly argues that it does not follow the lode must be rich although it may pass through the new ground, true, but he has not given any reason why it should not be as rich in tin as new as in the old ground. I presume if Mr. P. Goiffon was going to speculate in mining he would rather invest his cash near a good mine than a poor one, but there is an accomplished fact in connection with the new ground which shall speak for itself. The late company drove the 80 fm. level into that ground 8 fms., and 360l. worth of lead ore was sold from that place of ground, and the dues realised from the same was put to build a house on the property. I never heard of a property being abandoned with such results from a drive of 8 fms. unless they were compelled to do so, as they were in the present case. I am informed that the late company was too shrewd a man to be asking for a renewal of the lease if he thought the mine was exhausted. I am glad to hear that the present Herodsfot is improving again, and I believed the same results would be obtained in the north part, if it is properly developed.—Looe, April 1. THOS. TRELEASE.

[For remainder of Original Correspondence, see to-day's Journal.]

SOUTH ROSKEAR MINING COMPANY.

A special general meeting of adventurers was held at the office of the secretary (Mr. N. Spens), 12, St. Vincent-place, Glasgow, on Friday last.

The CHAIRMAN stated that arrangements had been made with the lords, Messrs. W. C. Pendarves, G. L. Basset, and F. G. Enys, by which the company could hold the setts and suspend operations for the present. The price of tin was rising, and he hoped it would soon reach such a figure as would enable the adventurers to resume operations without loss. Capt. Hosking, who was present, estimated the loss since the meeting in December at about 2000l., and the question was how to provide for this deficiency. One way was to realise the assets of the company, but after going into the matter fully with his fellow-directors and Capt. Hosking he was of opinion that the better plan was to make a call of 1l. per share, which would bring in 2271l. This would enable them to pay off every farthing of their liability, and leave money enough to hold the setts a year or more, and in order to do so he would move that a call of 1l. per share be made, payable one-half on May 1 and the remaining half on Aug. 1.—Seconded by Mr. J. BELL, and carried *nem. con.*

The CHAIRMAN said they might not have the pleasure of meeting Capt. Hosking again for some time, and he would not allow the present opportunity to pass without expressing the high appreciation of the other directors as well as himself and shareholders towards him. The work he had done for them had been done to their entire satisfaction, and had been most favourably reported on by the highest authorities who had been employed to inspect the mine. As a gentleman of integrity and honour they had every reason to place implicit confidence in him. He would, therefore, move, "That this meeting express their confidence in Capt. Hosking by a vote of thanks for the thorough way in which he has always discharged his duties to the company."—Seconded by Mr. JOHN BELL, and carried *nem. con.*

Capt. Hosking, after returning thanks for the compliments paid to him, said he had always been well supported by the underground agent, Capt. John Brenton, who was now under notice to leave, and he should be glad to see the adventurers make him a present of (say) a month's salary.—Resolved *nem. con.*: "That Capt. Brenton be presented with a month's salary, as suggested by Capt. Hosking."

The CHAIRMAN then proposed a vote of thanks to Mr. Spens, the secretary, for the special attention which he had given to the mine.—Seconded by Mr. KING, and carried *nem. con.*

Proposed by Mr. KING, seconded by Mr. J. BELL, and supported by Mr. Enys, "That the best thanks of the adventurers of this mine be given to the Chairman for his conduct in the air to-day, and for the deep interest which he has always taken in the company's affairs."

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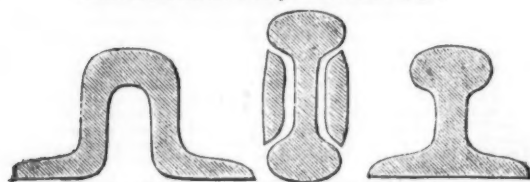
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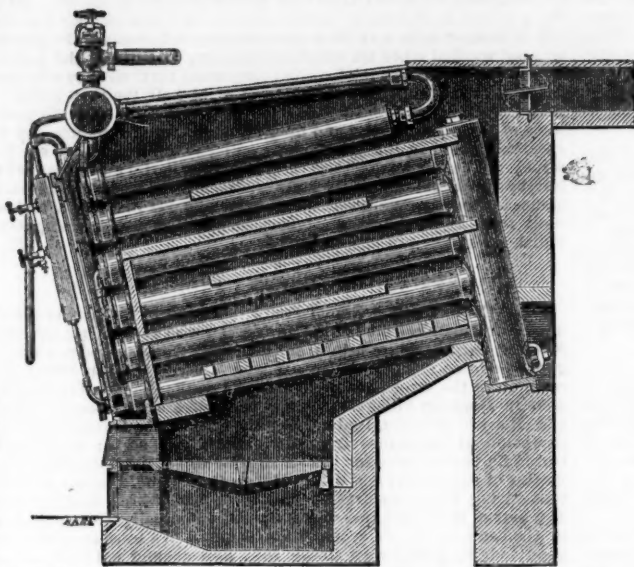
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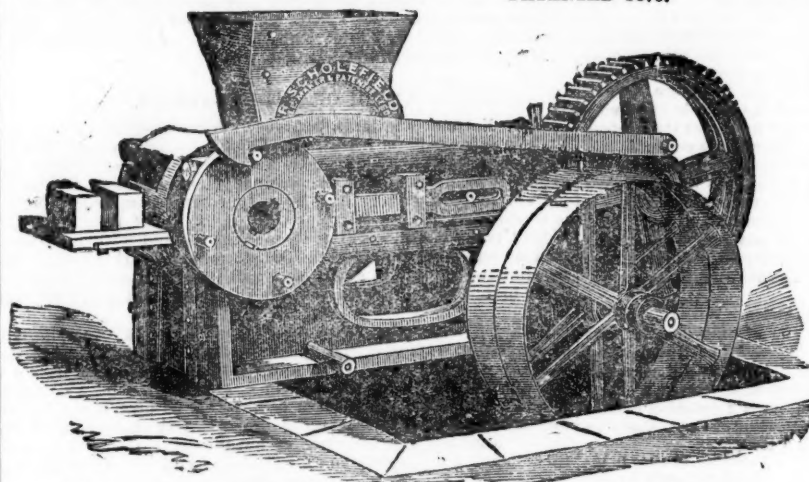
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Total cost of making 10,000 pressed bricks ... £1 5 0, or 2s. 6d. per 1000.

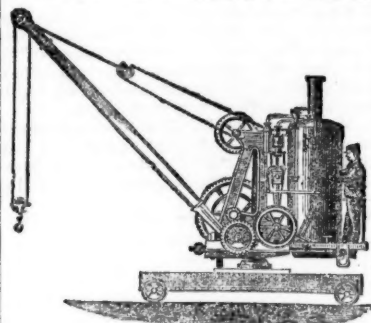
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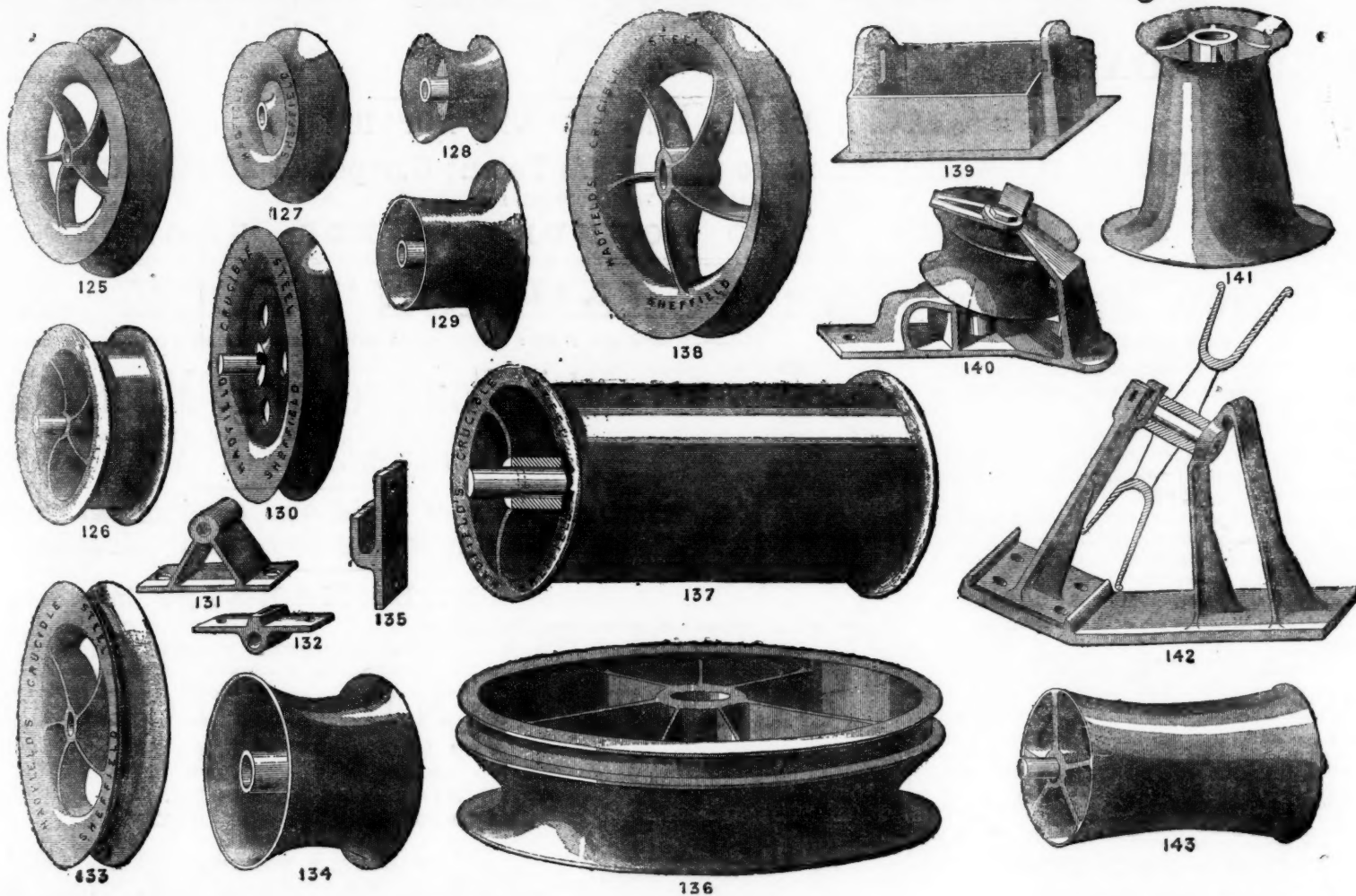
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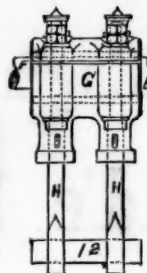
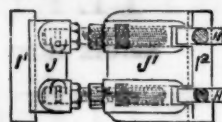
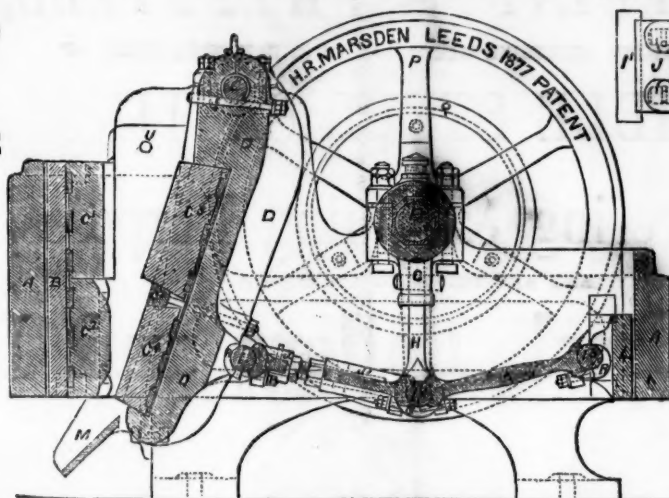
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friends feel desirous of seeing one of your machines at work,
I shall have much pleasure in showing the one alluded to.
I am, dear Sir, yours very truly,
WILLIAM MILLER.

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Wharhole Lime Works, Aspatria, Cumberland,
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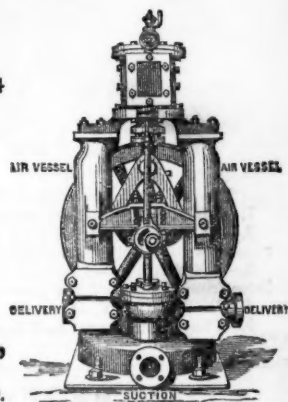
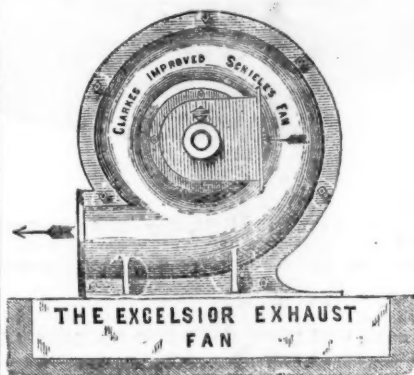
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